REMARKS

Claims 1 through 4, 6 and 7 are pending in this application. Applicants acknowledge with appreciation, the Examiner's indication that claim 7 contains allowable subject matter. Claim 7 has been placed in independent form. In addition, claims 1 and 4 have been amended. Care has been exercised to avoid the introduction of new matter. Indeed, the present Amendment merely clarifies previous limitations in claims 1 and 4 and, hence, does not generate any new issue. Adequate descriptive support for the amendments to claims 1 and 4 should be apparent throughout the originally-filed disclosure as, for example, Fig. 8 and the related discussion thereof in the written description of the specification. Applicants submit that the present Amendment does not generate any new matter issue.

Claims 1 through 4 and 6 were rejected under 35 U.S.C. §103 for obviousness predicated upon Bracchitta et al. in view of Tsutomu.

In the statement of the rejection, the Examiner admitted that the semiconductor device disclosed by Bracchitta et al. does not contain an insulating layer lining the bottom of the trench to function as an electric fuse. Nevertheless, the Examiner concluded that one having ordinary skill in the art would have been motivated to modify the semiconductor device disclosed by Bracchitta et al. by providing an insulating film lining the interior surface of the groove and sufficiently this to function as an electric fuse in view of Tsutomu referring to Fig. 2f. This rejection is traversed.

In order to establish a prima facie case of obviousness under 35 U.S.C. §103, the Examiner must establish the requisite motivational element. *In re Mayne*, 104 F.3d 1339, 41 USPQ2d 1451 (Fed. Cir. 1997); *In re Deuel*, 51 F.3d 1552, 34 USPQ2d 1210 (Fed. Cir. 1995). In order to

establish the requisite motivation, the Examiner must make a "thorough and searching" factual inquiry" and, based upon that factual inquiry, explain **why** one having ordinary skill in the art would have been realistically motivated to modify particular prior art, in this case the semiconductor device disclosed by Bracchitta et al., to arrive at the claimed invention. *In re Lee*, 237 F.3d 1338, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002). That burden has not been discharged.

Specifically, the Examiner admits that Bracchitta et al. do not provide an insulating layer lining the bottom of the trench which is thin enough to function as an electric fuse. Adverting to Fig. 4 of Bracchitta et al., it should be apparent that the surface insulating film 42 does not even line any portion of the actual trench 32 much less the entire surface of the trench 32 as in the claimed invention, **because trench 32 is filled with oxide** and planarized (column 2 of Bracchitta et al., lines 33 through 42). Hence, it would serve no apparent useful purpose to line the bottom of the trench with an oxide sufficiently thin to function as a fuse and then fill the trench up with oxide prior to forming a conductive layer thereon.

Indeed, in Fig. 2f of Tsutomu, a thin film resistor 3 is formed on the surface insulating film in the groove. However, as previously pointed out, in the device disclosed by Bracchitta et al., the conductive layer 40 does **not** fill the trench because it is already filled with an oxide and serves as a shallow trench isolation (STI). There appears to be **no factual** basis upon which to predicate the conclusion that one having ordinary skill in the art would somehow have been realistically impelled to modify the STI structure disclosed by Bracchitta et al. by lining the trench with the thin oxide fuse layer prior to filling it with oxide. *In re Lee, supra.* **Indeed, it is not apparent what function such a thin oxide fuse layer could possibly serve once the trench is filled.**

Moreover, any omission of the STI oxide fill from the trench 32 disclosed by Bracchitta et al. would **frustrate** the purpose of such an isolation region and, hence, would be **inconsistent** with the manner in which the disclosed device is intended to operate. It is well settled that one having ordinary skill in the art **cannot** be presumed motivated to modify a reference in a manner inconsistent with the disclosed objectives. *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992); *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); *In re Schulpen*, 390 F.2d 1009, 157 USPQ 52 (CCPA 1968).

In addition, it should be apparent and even **if** the applied references are combined as suggested by the Examiner, the claimed invention would **not** result, **because the conductive film would not be formed on the surface insulating film at the bottom of the trench due to the STI oxide fill in the device disclosed by Bracchitta et al.** In order to clarify that feature, claims 1 and 4 have been amended to recite that the conductive film is formed on the entire surface insulating film lining the trench . Hence, it appears clear that even the combined disclosures of the applied references would not generate the claimed invention. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988).

Applicants, therefore, submit that the imposed rejections of claims 1 through 4 and 6 under 35 U.S.C.§103 for obviousness predicated upon Bracchitta et al. in view of Tsutomu is not factually or legally viable and, hence, solicit withdrawal thereof.

Applicants acknowledge, with appreciation, the Examiner's indication that claim 7 contains allowable subject matter. Based upon the arguments submitted supra., it should be apparent that the

imposed rejection has been overcome and that all pending claims are in condition for immediate allowance.. Favorable consideration is, therefore, respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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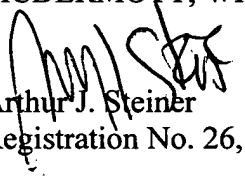

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